

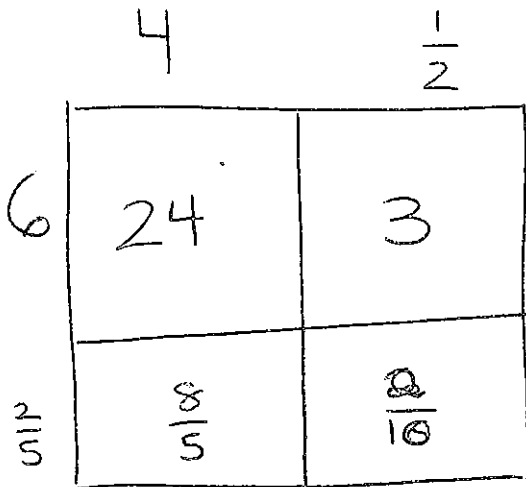
Name: \_\_\_\_\_

Unit 5 Lesson 4a: Multiplying Mixed Numbers - CLASSWORK

$$4\frac{1}{2} \times 6\frac{2}{5}$$

Lily's Method

- area models (partial products)



$$24 + 3 + \frac{8}{5} + \frac{2}{10} = 27 + \frac{16}{10} + \frac{2}{10}$$

I use an area model to multiply each part by each other part. Then I add my products and reduce, if necessary.

$$27\frac{18}{10} = 28\frac{8}{10} = 28\frac{4}{5}$$

Julia's Method

- traditional algorithm

$$4\frac{1}{2} = \frac{9}{2}$$

$$6\frac{2}{5} = \frac{32}{5}$$

$$\frac{16}{5} \cdot \frac{9}{2} = \frac{144}{5}$$

$$\begin{array}{r} 28 \\ 5 \overline{) 144} \\ \underline{104} \\ 44 \\ \underline{40} \\ 4 \end{array}$$

$$28\frac{4}{5}$$

$$\begin{array}{r} 5 \overline{) 16} \\ \underline{14} \\ 2 \end{array}$$

First, I change to improper fractions. Then I multiply, though sometimes I reduce 1st. Finally, I change back to a mixed #.

1. How are Lily's and Julia's methods related?

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2. Which method do you prefer at this point? Why?

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Directions: For each problem, complete both the area model and the traditional algorithm work. After this sheet, you may use whichever method you like for future problems!

$2\frac{1}{5} \circ 1\frac{1}{11}$	
Area Model	Algorithm
$4\frac{2}{3} \circ 2\frac{3}{4}$	
Area Model	Algorithm
$1\frac{1}{2} \circ 4\frac{1}{4}$	
Area Model	Algorithm

## Cooking with Fractions - Homework Project

**Goal:** Convert a recipe using a mixed number multiplier

**Draft Due:** Tuesday, February 17

**Final Due:** Friday, February 20

**Grade:** See attached rubric

### Step 1: Choose recipe

1. Choose a recipe from home or online (ex. cookinglight.com)
2. Your recipe must meet the following requirements:
  - ☐ Recipe has at least 6 different ingredients
  - ☐ Recipe has at least 4 different fractional amounts
  - ☐ Of the at least 4 fractional amounts, at least 2 must be mixed numbers
  - ☐ Recipe shows original number of servings made

### Step 2: Set up a table

Recipe Title:		
Source:		
Ingredients	Original Recipe (serves _____)	Converted Recipe (serves _____)

### Step 3: Convert recipe

1. Choose a mixed number to convert your recipe with (ex. I will make  $2\frac{1}{2}$  times the original recipe) that meets the following requirements:
  - ☐ mixed number must be greater than 2 and less than 25
  - ☐ mixed number should be appropriate to your current level of comfort with multiplying mixed numbers
2. Show all calculations for your conversions on a separate sheet of paper
  - ☐ keep your work neat and organized
  - ☐ label work for each ingredient
  - ☐ All answers must be in simplest form
3. Record simplified answers for each ingredient on your table.

### Step 4: Beautify your project

All projects should meet the following requirements:

- ☐ Finished table is legible (typing is allowed, though not required)
- ☐ Table is neatly attached to the front of a piece of standard construction paper (any color)
- ☐ Work page is attached to the back of the construction paper
- ☐ Instructions for the recipe are included
  - ☐ A visual of the recipe may also be included, though not required.
- ☐ Layout of project is neat, organized, and shows clear effort and attention to detail.
- ☐ Student name and class period is on the back of the construction paper

### Grading Rubric:

This is a 10 - point homework assignment. Since it is a project, it may be turned in late; however, per school policy, it will lose a letter grade for every day that it is late. Projects may not be redone for credit.

Criteria	Excellent	Good	Some Problems	Needs Work
Recipe Selection (3 points)	Recipe meets all 4 criteria. Recipe source is clearly indicated.  3	Recipe meets all 4 criteria, but source is unclear or missing.  2	Recipe meets at least 2 of the criteria. Source may or may not be missing.  1	Recipe meets at most 1 of the criteria. Source may or may not be missing.  0
Mathematical Work (4 points)	All multiplication work shown on notebook paper. Work is neat and organized. Calculations show every step. Calculations all accurate. Answers include units. Multiplier is appropriate for student.  4	All multiplication work shown on notebook paper. Work is mostly neat and organized. Calculations show all critical steps. Calculations contain 1-2 minor errors. Answers include units. Multiplier may not be appropriate for student.  3	All multiplication work shown on notebook paper. Work is legible. Calculations show some steps. Calculations contain medium to significant errors.  2	All multiplication work shown on notebook paper. Work is messy. Calculations missing critical steps. Calculations contain significant errors.  1 or 0
Data Table (2 points)	Table is neat and organized. Table includes units! All data recorded appropriately on table.  2	Table is mostly neat and organized. Table includes units! All data recorded on table.  1.5	Table is messy or missing pieces.  1	Table is messy and missing pieces.  0
Aesthetics (1 point)	Project meets all beautification requirements and shows an exceptional amount of attention and effort.  1	Project meets all beautification requirements and shows an average amount of attention and effort  0.5	Project does not meet some beautification requirements or shows distinct lack of attention to detail and effort.  0.5	Project does not meet all beautification requirements and shows a distinct lack of attention to detail and effort.  0